

Amendments to the Claims

Please cancel claims 1- 51 and add new claims 52 - 219.

1 – 51. (cancelled)

52. (new) A heterologous fusion protein comprising a hyperglycosylated G-CSF analog fused to a polypeptide selected from the group consisting of

- a) human albumin;
- b) human albumin analogs; and
- c) fragments of human albumin.

53. (new) The heterologous fusion protein of Claim 52, wherein the hyperglycosylated G-CSF analog is fused to the polypeptide via a peptide linker.

54. (new) The heterologous fusion protein of Claim 53 wherein the peptide linker is selected from the group consisting of:

- a) a glycine rich peptide;
- b) a peptide having the sequence [Gly-Gly-Gly-Gly-Ser]_n where n is 1, 2, 3, 4, or 5; and
- c) a peptide having the sequence [Gly-Gly-Gly-Gly-Ser]₃.

55. (new) The heterologous fusion protein of Claim 52 wherein the hyperglycosylated G-CSF analog comprises the amino acid sequence of the formula I: [SEQ ID NO: 1]

1	Pro	Leu	Gly	5	Pro	Ala	Ser	Ser	10	Leu	Pro	Gln	Ser	Phe	15	Leu	Leu	Lys
			20	Val	Arg	Lys	Ile	Gln	25	Gly	Asp	Gly	Ala	Ala	30	Leu	Gln	
		35	Glu	Lys	Cys	Xaa	Xaa	Xaa	40	Lys	Leu	Cys	His	Pro	45	Glu	Glu	Val
		50	Leu	Leu	Gly	His	Ser	Leu	55	Gly	Ile	Xaa	Xaa	Xaa	60	Xaa	Xaa	Xaa
		65	Xaa	Xaa	Xaa	Xaa	70	Gln	75	Cys	Leu	Ser	Gln	Leu	80	His	Ser	
				85	Tyr	Gln	Gly	Leu	90	Gln	Ala	Leu	Xaa	Xaa	95	Xaa	Ser	
			100	Pro	Thr	Leu	Asp	Thr	105	Leu	Gln	Leu	Asp	Val	110	Ala	Asp	
			115	Thr	Ile	Trp	Gln	Gln	120	Met	Glu	Glu	Leu	Gly	125	Met	Ala	Pro
			130	Ala	Gln	Pro	Xaa	Xaa	135	Ala	Met	Pro	Ala	Phe	140	Xaa	Xaa	Xaa
			145	Gln	Arg	Arg	Ala	Gly	150	Gly	Val	Leu	Val	Ala	155	Ser	His	Leu
				165	Tyr	Arg	Val	Leu	170	Arg	His	Leu	Ala	Gln	175	Pro		
																		(I)

wherein:

Xaa at position 17 is Cys, Ala, Leu, Ser, or Glu;
 Xaa at position 37 is Ala or Asn;
 Xaa at position 38 is Thr, or any other amino acid except Pro;
 Xaa at position 39 is Tyr, Thr, or Ser;
 Xaa at position 57 is Pro or Val;
 Xaa at position 58 is Trp or Asn;
 Xaa at position 59 is Ala or any other amino acid except Pro;
 Xaa at position 60 is Pro, Thr, Asn, or Ser,
 Xaa at position 61 is Leu, or any other amino acid except Pro;
 Xaa at position 62 is Ser or Thr;
 Xaa at position 63 is Ser or Asn;
 Xaa at position 64 is Cys or any other amino acid except Pro;
 Xaa at position 65 is Pro, Ser, or Thr;
 Xaa at position 66 is Ser or Thr;
 Xaa at position 67 is Gln or Asn;
 Xaa at position 68 is Ala or any other amino acid except Pro;
 Xaa at position 69 is Leu, Thr, or Ser
 Xaa at position 93 is Glu or Asn
 Xaa at position 94 is Gly or any other amino acid except Pro;
 Xaa at position 95 is Ile, Asn, Ser, or Thr;
 Xaa at position 97 is Pro, Ser, Thr, or Asn;
 Xaa at position 133 is Thr or Asn;
 Xaa at position 134 is Gln or any other amino acid except Pro;
 Xaa at position 135 is Gly, Ser, or Thr
 Xaa at position 141 is Ala or Asn;
 Xaa at position 142 is Ser or any other amino acid except Pro; and
 Xaa at position 143 is Ala, Ser, or Thr;

56. (new) The heterologous fusion protein of Claim 53 wherein the hyperglycosylated G-CSF analog comprises the amino acid sequence of the formula I: [SEQ ID NO: 1]

1				5				10				15			
Thr	Pro	Leu	Gly	Pro	Ala	Ser	Ser	Leu	Pro	Gln	Ser	Phe	Leu	Leu	Lys
			20					25					30		
Xaa	Leu	Glu	Gln	Val	Arg	Lys	Ile	Gln	Gly	Asp	Gly	Ala	Ala	Leu	Gln
		35					40					45			
Glu	Lys	Leu	Cys	Xaa	Xaa	Xaa	Lys	Leu	Cys	His	Pro	Glu	Glu	Leu	Val
		50				55					60				
Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65					70				75					80	
Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His	Ser
			85					90					95		
Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Xaa	Xaa	Xaa	Ser

			100					105					110			
Xaa	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala	Asp	
		115					120					125				
Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala	Pro	
	130					135					140					
Ala	Leu	Gln	Pro	Xaa	Xaa	Xaa	Ala	Met	Pro	Ala	Phe	Xaa	Xaa	Xaa	Phe	
145					150					155					160	
Gln	Arg	Arg	Ala	Gly	Gly	Val	Leu	Val	Ala	Ser	His	Leu	Aln	Ser	Phe	
			165					170								
Leu	Glu	Val	Ser	Tyr	Arg	Val	Leu	Arg	His	Leu	Ala	Gln	Pro		(I)	

wherein:

Xaa at position 17 is Cys, Ala, Leu, Ser, or Glu;

Xaa at position 37 is Ala or Asn;

Xaa at position 38 is Thr, or any other amino acid except Pro;

Xaa at position 39 is Tyr, Thr, or Ser;

Xaa at position 57 is Pro or Val;

Xaa at position 58 is Trp or Asn;

Xaa at position 59 is Ala or any other amino acid except Pro;

Xaa at position 60 is Pro, Thr, Asn, or Ser,

Xaa at position 61 is Leu, or any other amino acid except Pro;

Xaa at position 62 is Ser or Thr;

Xaa at position 63 is Ser or Asn;

Xaa at position 64 is Cys or any other amino acid except Pro;

Xaa at position 65 is Pro, Ser, or Thr;

Xaa at position 66 is Ser or Thr;

Xaa at position 67 is Gln or Asn;

Xaa at position 68 is Ala or any other amino acid except Pro;

Xaa at position 69 is Leu, Thr, or Ser

Xaa at position 93 is Glu or Asn

Xaa at position 94 is Gly or any other amino acid except Pro;

Xaa at position 95 is Ile, Asn, Ser, or Thr;

Xaa at position 97 is Pro, Ser, Thr, or Asn;

Xaa at position 133 is Thr or Asn;

Xaa at position 134 is Gln or any other amino acid except Pro;

Xaa at position 135 is Gly, Ser, or Thr

Xaa at position 141 is Ala or Asn;

Xaa at position 142 is Ser or any other amino acid except Pro; and

Xaa at position 143 is Ala, Ser, or Thr;

57. (new) The heterologous fusion protein of Claim 54 wherein the hyperglycosylated G-CSF analog comprises the amino acid sequence of the formula I: [SEQ ID NO: 1]

1	5	10	15												
Thr	Pro	Leu	Gly	Pro	Ala	Ser	Ser	Leu	Pro	Gln	Ser	Phe	Leu	Leu	Lys
			20					25					30		
Xaa	Leu	Glu	Gln	Val	Arg	Lys	Ile	Gln	Gly	Asp	Gly	Ala	Ala	Leu	Gln
		35					40					45			
Glu	Lys	Leu	Cys	Xaa	Xaa	Xaa	Lys	Leu	Cys	His	Pro	Glu	Glu	Leu	Val
	50					55					60				
Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65					70				75						80
Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His	Ser
			85						90					95	
Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Xaa	Xaa	Xaa	Ser
			100					105					110		
Xaa	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala	Asp
		115					120					125			
Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala	Pro
	130					135					140				
Ala	Leu	Gln	Pro	Xaa	Xaa	Xaa	Ala	Met	Pro	Ala	Phe	Xaa	Xaa	Xaa	Phe
145					150					155					160
Gln	Arg	Arg	Ala	Gly	Gly	Val	Leu	Val	Ala	Ser	His	Leu	Aln	Ser	Phe
			165						170						
Leu	Glu	Val	Ser	Tyr	Arg	Val	Leu	Arg	His	Leu	Ala	Gln	Pro		(I)

wherein:

Xaa at position 17 is Cys, Ala, Leu, Ser, or Glu;

Xaa at position 37 is Ala or Asn;

Xaa at position 38 is Thr, or any other amino acid except Pro;

Xaa at position 39 is Tyr, Thr, or Ser;

Xaa at position 57 is Pro or Val;

Xaa at position 58 is Trp or Asn;

Xaa at position 59 is Ala or any other amino acid except Pro;

Xaa at position 60 is Pro, Thr, Asn, or Ser,

Xaa at position 61 is Leu, or any other amino acid except Pro;

Xaa at position 62 is Ser or Thr;

Xaa at position 63 is Ser or Asn;

Xaa at position 64 is Cys or any other amino acid except Pro;

Xaa at position 65 is Pro, Ser, or Thr;

Xaa at position 66 is Ser or Thr;

Xaa at position 67 is Gln or Asn;

Xaa at position 68 is Ala or any other amino acid except Pro;

Xaa at position 69 is Leu, Thr, or Ser

Xaa at position 93 is Glu or Asn

Xaa at position 94 is Gly or any other amino acid except Pro;

Xaa at position 95 is Ile, Asn, Ser, or Thr;

Xaa at position 97 is Pro, Ser, Thr, or Asn;

Xaa at position 133 is Thr or Asn;

Xaa at position 134 is Gln or any other amino acid except Pro;

Xaa at position 135 is Gly, Ser, or Thr

Xaa at position 141 is Ala or Asn;

Xaa at position 142 is Ser or any other amino acid except Pro; and

Xaa at position 143 is Ala, Ser, or Thr;

58. (new) The heterologous fusion protein of Claim 53 wherein any two regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

59. (new) The heterologous fusion protein of Claim 53 wherein any three regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

60. (new) The heterologous fusion protein of Claim 53 wherein any four regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

61. (new) The heterologous fusion protein of Claim 53 wherein the hyperglycosylated G-CSF analog is selected from the group consisting of:

- a) G-CSF[A37N,Y39T]
- b) G-CSF[P57V,W58N,P60T]
- c) G-CSF[P60N,S62T]
- d) G-CSF[S63N,P65T]
- e) G-CSF[Q67N,L69T]
- f) G-CSF[E93N,I95T]
- g) G-CSF[T133N,G135T]
- h) G-CSF[A141N,A143T]
- i) G-CSF[A37N,Y39T,P57V,W58N,P60T]
- j) G-CSF[A37N,Y39T,P60N,S62T]
- k) G-CSF[A37N,Y39T,S63N,P65T]
- l) G-CSF[A37N,Y39T,Q67N,L69T]
- m) G-CSF[A37N,Y39T,E93N,I95T]
- n) G-CSF[A37N,Y39T,T133N,G135T]
- o) G-CSF[A37N,Y39T,A141N,A143T]
- p) G-CSF[A37N,Y39T,P57V,W58N,P60T,S63N,P65T]
- q) G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]
- r) G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

62. (new) The heterologous fusion protein of Claim 56 wherein any two regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

63. (new) The heterologous fusion protein of Claim 56 wherein any three regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

64. (new) The heterologous fusion protein of Claim 56 wherein any four regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

65. (new) The heterologous fusion protein of Claim 56 wherein the hyperglycosylated G-CSF analog is selected from the group consisting of:

- a) G-CSF[A37N,Y39T]
- b) G-CSF[P57V,W58N,P60T]
- c) G-CSF[P60N,S62T]
- d) G-CSF[S63N,P65T]
- e) G-CSF[Q67N,L69T]
- f) G-CSF[E93N,I95T]
- g) G-CSF[T133N,G135T]
- h) G-CSF[A141N,A143T]
- i) G-CSF[A37N,Y39T,P57V,W58N,P60T]
- j) G-CSF[A37N,Y39T,P60N,S62T]
- k) G-CSF[A37N,Y39T,S63N,P65T]
- l) G-CSF[A37N,Y39T,Q67N,L69T]
- m) G-CSF[A37N,Y39T,E93N,I95T]
- n) G-CSF[A37N,Y39T,T133N,G135T]
- o) G-CSF[A37N,Y39T,A141N,A143T]
- p) G-CSF[A37N,Y39T,P57V,W58N,P60T,S63N,P65T]
- q) G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]
- r) G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

66. (new) The heterologous fusion protein of Claim 57 wherein any two regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

67. (new) The heterologous fusion protein of Claim 57 wherein any three regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

68. (new) The heterologous fusion protein of Claim 57 wherein any four regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

69. (new) The heterologous fusion protein of Claim 57 wherein the hyperglycosylated G-CSF analog is selected from the group consisting of:

- a) G-CSF[A37N,Y39T]
- b) G-CSF[P57V,W58N,P60T]
- c) G-CSF[P60N,S62T]
- d) G-CSF[S63N,P65T]
- e) G-CSF[Q67N,L69T]
- f) G-CSF[E93N,I95T]
- g) G-CSF[T133N,G135T]
- h) G-CSF[A141N,A143T]
- i) G-CSF[A37N,Y39T,P57V,W58N,P60T]
- j) G-CSF[A37N,Y39T,P60N,S62T]
- k) G-CSF[A37N,Y39T,S63N,P65T]
- l) G-CSF[A37N,Y39T,Q67N,L69T]
- m) G-CSF[A37N,Y39T,E93N,I95T]
- n) G-CSF[A37N,Y39T,T133N,G135T]
- o) G-CSF[A37N,Y39T,A141N,A143T]
- p) G-CSF[A37N,Y39T,P57V,W58N,P60T,S63N,P65T]
- q) G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]
- r) G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

70. (new) The heterologous fusion protein of claim 61, wherein the hyperglycosylated G-CSF analog is G-CSF[A37N, Y39T,P57V,W58N,P60T,Q67N,L69T].

71. (new) The heterologous fusion protein of claim 65, wherein the hyperglycosylated G-CSF analog is G-CSF[A37N, Y39T,P57V,W58N,P60T,Q67N,L69T].

72. (new) The heterologous fusion protein of claim 69, wherein the hyperglycosylated G-CSF analog is G-CSF[A37N, Y39T,P57V,W58N,P60T,Q67N,L69T].

73. (new) The heterologous fusion protein of claim 61, wherein the hyperglycosylated G-CSF analog is G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T].
74. (new) The heterologous fusion protein of claim 65, wherein the hyperglycosylated G-CSF analog is G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T].
75. (new) The heterologous fusion protein of claim 69, wherein the hyperglycosylated G-CSF analog is G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T].
76. (new) A heterologous fusion protein which is the product of the expression in a host cell of an exogenous DNA sequence which comprises a DNA sequence encoding a heterologous fusion protein of Claim 52.
77. (new) A heterologous fusion protein which is the product of the expression in a host cell of an exogenous DNA sequence which comprises a DNA sequence encoding a heterologous fusion protein of Claim 55.
78. (new) A heterologous fusion protein which is the product of the expression in a host cell of an exogenous DNA sequence which comprises a DNA sequence encoding a heterologous fusion protein of Claim 56.
79. (new) A polynucleotide encoding a heterologous fusion protein of Claim 52.
80. (new) A polynucleotide encoding a heterologous fusion protein of Claim 53.
81. (new) A polynucleotide encoding a heterologous fusion protein of Claim 55.
82. (new) A polynucleotide encoding a heterologous fusion protein of Claim 56.
83. (new) A polynucleotide encoding a heterologous fusion protein of Claim 57.
84. (new) A polynucleotide which comprises a DNA sequence selected from the group consisting of:
- a) SEQ ID NO:2
 - b) SEQ ID NO:3
 - c) SEQ ID NO:4
 - d) SEQ ID NO:5
 - e) SEQ ID NO:6
 - f) SEQ ID NO:7
 - g) SEQ ID NO:8
 - h) SEQ ID NO:9

- i) SEQ ID NO:10
- j) SEQ ID NO:11
- k) SEQ ID NO:12
- l) SEQ ID NO:13
- m) SEQ ID NO:14
- n) SEQ ID NO:15
- o) SEQ ID NO:16 or
- p) SEQ ID NO:17,

85. (new) The polynucleotide of Claim 84, wherein the DNA fused in-frame comprises SEQ ID NO: 17.

86. (new) The heterologous fusion protein of Claim 52 wherein the polypeptide is human albumin.

87. (new) The heterologous fusion protein of Claim 53 wherein the polypeptide is human albumin.

88. (new) The heterologous fusion protein of Claim 52 wherein the polypeptide is an N-terminal fragment of albumin.

89. (new) The heterologous fusion protein of Claim 53 wherein the polypeptide is an N-terminal fragment of albumin.

90. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 52.

91. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 53.

92. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 55.

93. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 56.

94. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 61.

95. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 70.

96. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 73.

97. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 86.

98. (new) A method for increasing neutrophil levels in a mammal comprising administering a therapeutically effective amount of the heterologous fusion protein of Claim 88.

99. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 52.

100. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 53.

101. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 55.

102. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 56.

103. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 61.

104. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 70.

105. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 73.

106. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 86.

107. (new) A method of treating a patient with insufficient circulating neutrophil levels comprising administering to a patient in need thereof, an effective amount of a heterologous fusion protein of Claim 88.

108. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 52.

109. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 53.

110. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 55.

111. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 56.

112. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 61.

113. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 70.

114. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 73.

115. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 86.

116. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 88.

117. (new) A heterologous fusion protein comprising a hyperglycosylated G-CSF analog fused to a polypeptide selected from the group consisting of:

- a) the Fc portion of an immunoglobulin;
- b) an analog of the Fc portion of an immunoglobulin; and
- c) fragments of the Fc portion of an immunoglobulin.

118. (new) The heterologous fusion protein of Claim 117, wherein the hyperglycosylated G-CSF analog is fused to the polypeptide via a peptide linker.

119. (new) The heterologous fusion protein of the Claim 118 wherein the peptide linker is selected from the group consisting of:

- a) a glycine rich peptide;
- b) a peptide having the sequence [Gly-Gly-Gly-Gly-Ser]_n where n is 1, 2, 3, 4, or 5; and
- c) a peptide having the sequence [Gly-Gly-Gly-Gly-Ser]₃.

120. (new) The heterologous fusion protein of Claim 117, wherein the hyperglycosylated G-CSF analog comprises the amino acid sequence of the formula I: [SEQ ID NO: 1]

1	Thr	Pro	Leu	Gly	5	Pro	Ala	Ser	Ser	10	Leu	Pro	Gln	Ser	Phe	15	Leu	Leu	Lys
			20							25						30			
	Xaa	Leu	Glu	Gln	Val	Arg	Lys	Ile	Gln	Gly	Asp	Gly	Ala	Ala	Ala	Leu	Gln		
			35					40						45					
	Glu	Lys	Leu	Cys	Xaa	Xaa	Xaa	Lys	Leu	Cys	His	Pro	Glu	Glu	Leu	Val			
		50					55					60							
	Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65						70					75								80
	Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His	Ser			
				85					90					95					
	Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Xaa	Xaa	Xaa	Ser			
			100						105					110					
	Xaa	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala	Asp			
			115					120					125						
	Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala	Pro			
		130				135						140							
	Ala	Leu	Gln	Pro	Xaa	Xaa	Ala	Met	Pro	Ala	Phe	Xaa	Xaa	Xaa	Phe				
145					150					155						160			
	Gln	Arg	Arg	Ala	Gly	Gly	Val	Leu	Val	Ala	Ser	His	Leu	Aln	Ser	Phe			

Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro (I)

Xaa at position 17 is Cys, Ala, Leu, Ser, or Glu;
Xaa at position 37 is Ala or Asn;
Xaa at position 38 is Thr, or any other amino acid except Pro;
Xaa at position 39 is Tyr, Thr, or Ser;
Xaa at position 57 is Pro or Val;
Xaa at position 58 is Trp or Asn;
Xaa at position 59 is Ala or any other amino acid except Pro;
Xaa at position 60 is Pro, Thr, Asn, or Ser,
Xaa at position 61 is Leu, or any other amino acid except Pro;
Xaa at position 62 is Ser or Thr;
Xaa at position 63 is Ser or Asn;
Xaa at position 64 is Cys or any other amino acid except Pro;
Xaa at position 65 is Pro, Ser, or Thr;
Xaa at position 66 is Ser or Thr;
Xaa at position 67 is Gln or Asn;
Xaa at position 68 is Ala or any other amino acid except Pro;
Xaa at position 69 is Leu, Thr, or Ser
Xaa at position 93 is Glu or Asn
Xaa at position 94 is Gly or any other amino acid except Pro;
Xaa at position 95 is Ile, Asn, Ser, or Thr;
Xaa at position 97 is Pro, Ser, Thr, or Asn;
Xaa at position 133 is Thr or Asn;
Xaa at position 134 is Gln or any other amino acid except Pro;
Xaa at position 135 is Gly, Ser, or Thr
Xaa at position 141 is Ala or Asn;
Xaa at position 142 is Ser or any other amino acid except Pro; and
Xaa at position 143 is Ala, Ser, or Thr;

1					5					10					15				
Thr	Pro	Leu	Gly	Pro	Ala	Ser	Ser	Leu	Pro	Gln	Ser	Phe	Leu	Leu	Lys				
			20							25				30					
Xaa	Leu	Glu	Gln	Val	Arg	Lys	Ile	Gln	Gly	Asp	Gly	Ala	Ala	Leu	Gln				
			35							40				45					
Glu	Lys	Leu	Cys	Xaa	Xaa	Xaa	Lys	Leu	Cys	His	Pro	Glu	Glu	Leu	Val				
			50							55				60					
Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa				
			65							70				75					
Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His	Ser				

				85					90					95			
Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Xaa	Xaa	Xaa	Ser		
			100					105					110				
Xaa	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala	Asp		
		115					120					125					
Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala	Pro		
	130					135					140						
Ala	Leu	Gln	Pro	Xaa	Xaa	Xaa	Ala	Met	Pro	Ala	Phe	Xaa	Xaa	Xaa	Phe		
145					150					155					160		
Gln	Arg	Arg	Ala	Gly	Gly	Val	Leu	Val	Ala	Ser	His	Leu	Aln	Ser	Phe		
			165					170									
Leu	Glu	Val	Ser	Tyr	Arg	Val	Leu	Arg	His	Leu	Ala	Gln	Pro		(I)		

wherein:

Xaa at position 17 is Cys, Ala, Leu, Ser, or Glu;

Xaa at position 37 is Ala or Asn;

Xaa at position 38 is Thr, or any other amino acid except Pro;

Xaa at position 39 is Tyr, Thr, or Ser;

Xaa at position 57 is Pro or Val;

Xaa at position 58 is Trp or Asn;

Xaa at position 59 is Ala or any other amino acid except Pro;

Xaa at position 60 is Pro, Thr, Asn, or Ser,

Xaa at position 61 is Leu, or any other amino acid except Pro;

Xaa at position 62 is Ser or Thr;

Xaa at position 63 is Ser or Asn;

Xaa at position 64 is Cys or any other amino acid except Pro;

Xaa at position 65 is Pro, Ser, or Thr;

Xaa at position 66 is Ser or Thr;

Xaa at position 67 is Gln or Asn;

Xaa at position 68 is Ala or any other amino acid except Pro;

Xaa at position 69 is Leu, Thr, or Ser

Xaa at position 93 is Glu or Asn

Xaa at position 94 is Gly or any other amino acid except Pro;

Xaa at position 95 is Ile, Asn, Ser, or Thr;

Xaa at position 97 is Pro, Ser, Thr, or Asn;

Xaa at position 133 is Thr or Asn;

Xaa at position 134 is Gln or any other amino acid except Pro;

Xaa at position 135 is Gly, Ser, or Thr

Xaa at position 141 is Ala or Asn;

Xaa at position 142 is Ser or any other amino acid except Pro; and

Xaa at position 143 is Ala, Ser, or Thr;

122. (new) The heterologous fusion protein of Claim 119, wherein the hyperglycosylated G-CSF analog comprises the amino acid sequence of the formula I: [SEQ ID NO: 1]

1				5					10					15			
Thr	Pro	Leu	Gly	Pro	Ala	Ser	Ser	Leu	Pro	Gln	Ser	Phe	Leu	Leu	Lys		
			20					25					30				
Xaa	Leu	Glu	Gln	Val	Arg	Lys	Ile	Gln	Gly	Asp	Gly	Ala	Ala	Leu	Gln		
		35					40					45					
Glu	Lys	Leu	Cys	Xaa	Xaa	Xaa	Lys	Leu	Cys	His	Pro	Glu	Glu	Leu	Val		
	50					55					60						
Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa		
65					70					75					80		
Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His	Ser		
				85				90					95				
Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Xaa	Xaa	Xaa	Ser		
			100				105						110				
Xaa	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala	Asp		
		115					120					125					
Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala	Pro		
	130					135					140						
Ala	Leu	Gln	Pro	Xaa	Xaa	Xaa	Ala	Met	Pro	Ala	Phe	Xaa	Xaa	Xaa	Phe		
145					150					155					160		
Gln	Arg	Arg	Ala	Gly	Gly	Val	Leu	Val	Ala	Ser	His	Leu	Aln	Ser	Phe		
			165				170										
Leu	Glu	Val	Ser	Tyr	Arg	Val	Leu	Arg	His	Leu	Ala	Gln	Pro		(I)		

wherein:

Xaa at position 17 is Cys, Ala, Leu, Ser, or Glu;

Xaa at position 37 is Ala or Asn;

Xaa at position 38 is Thr, or any other amino acid except Pro;

Xaa at position 39 is Tyr, Thr, or Ser;

Xaa at position 57 is Pro or Val;

Xaa at position 58 is Trp or Asn;

Xaa at position 59 is Ala or any other amino acid except Pro;

Xaa at position 60 is Pro, Thr, Asn, or Ser,

Xaa at position 61 is Leu, or any other amino acid except Pro;

Xaa at position 62 is Ser or Thr;

Xaa at position 63 is Ser or Asn;

Xaa at position 64 is Cys or any other amino acid except Pro;

Xaa at position 65 is Pro, Ser, or Thr;

Xaa at position 66 is Ser or Thr;

Xaa at position 67 is Gln or Asn;

Xaa at position 68 is Ala or any other amino acid except Pro;

Xaa at position 69 is Leu, Thr, or Ser

Xaa at position 93 is Glu or Asn

Xaa at position 94 is Gly or any other amino acid except Pro;

Xaa at position 95 is Ile, Asn, Ser, or Thr;

Xaa at position 97 is Pro, Ser, Thr, or Asn;

Xaa at position 133 is Thr or Asn;

Xaa at position 134 is Gln or any other amino acid except Pro;

Xaa at position 135 is Gly, Ser, or Thr

Xaa at position 141 is Ala or Asn;

Xaa at position 142 is Ser or any other amino acid except Pro; and

Xaa at position 143 is Ala, Ser, or Thr;

123. (new) The heterologous fusion protein of Claim 120 wherein any two regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

124. (new) The heterologous fusion protein of Claim 120 wherein any three regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

125. (new) The heterologous fusion protein of Claim 120 wherein any four regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

126. (new) The heterologous fusion protein of Claim 120 wherein the hyperglycosylated G-CSF analog is selected from the group consisting of:

- a) G-CSF[A37N,Y39T]
- b) G-CSF[P57V,W58N,P60T]
- c) G-CSF[P60N,S62T]
- d) G-CSF[S63N,P65T]
- e) G-CSF[Q67N,L69T]
- f) G-CSF[E93N,I95T]
- g) G-CSF[T133N,G135T]
- h) G-CSF[A141N,A143T]
- i) G-CSF[A37N,Y39T,P57V,W58N,P60T]
- j) G-CSF[A37N,Y39T,P60N,S62T]
- k) G-CSF[A37N,Y39T,S63N,P65T]
- l) G-CSF[A37N,Y39T,Q67N,L69T]
- m) G-CSF[A37N,Y39T,E93N,I95T]
- n) G-CSF[A37N,Y39T,T133N,G135T]
- o) G-CSF[A37N,Y39T,A141N,A143T]
- p) G-CSF[A37N,Y39T,P57V,W58N,P60T,S63N,P65T]
- q) G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]
- r) G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

127. (new) The heterologous fusion protein of Claim 121 wherein any two regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

128. (new) The heterologous fusion protein of Claim 121 wherein any three regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

129. (new) The heterologous fusion protein of Claim 121 wherein any four regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

130. (new) The heterologous fusion protein of Claim 121 wherein the hyperglycosylated G-CSF analog is selected from the group consisting of:

- a) G-CSF[A37N,Y39T]
- b) G-CSF[P57V,W58N,P60T]
- c) G-CSF[P60N,S62T]
- d) G-CSF[S63N,P65T]
- e) G-CSF[Q67N,L69T]
- f) G-CSF[E93N,I95T]
- g) G-CSF[T133N,G135T]
- h) G-CSF[A141N,A143T]
- i) G-CSF[A37N,Y39T,P57V,W58N,P60T]
- j) G-CSF[A37N,Y39T,P60N,S62T]
- k) G-CSF[A37N,Y39T,S63N,P65T]
- l) G-CSF[A37N,Y39T,Q67N,L69T]
- m) G-CSF[A37N,Y39T,E93N,I95T]
- n) G-CSF[A37N,Y39T,T133N,G135T]
- o) G-CSF[A37N,Y39T,A141N,A143T]
- p) G-CSF[A37N,Y39T,P57V,W58N,P60T,S63N,P65T]
- q) G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]
- r) G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

131. (new) The heterologous fusion protein of Claim 122 wherein any two regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

132. (new) The heterologous fusion protein of Claim 122 wherein any three regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

133. (new) The heterologous fusion protein of Claim 122 wherein any four regions of regions 1 through 14 comprise the sequence Asn Xaa1 Xaa2 wherein Xaa1 is any amino acid except Pro and Xaa2 is Ser or Thr.

134. (new) The heterologous fusion protein of Claim 122 wherein the hyperglycosylated G-CSF analog is selected from the group consisting of:

- a) G-CSF[A37N,Y39T]
- b) G-CSF[P57V,W58N,P60T]
- c) G-CSF[P60N,S62T]
- d) G-CSF[S63N,P65T]
- e) G-CSF[Q67N,L69T]
- f) G-CSF[E93N,I95T]
- g) G-CSF[T133N,G135T]
- h) G-CSF[A141N,A143T]
- i) G-CSF[A37N,Y39T,P57V,W58N,P60T]
- j) G-CSF[A37N,Y39T,P60N,S62T]
- k) G-CSF[A37N,Y39T,S63N,P65T]
- l) G-CSF[A37N,Y39T,Q67N,L69T]
- m) G-CSF[A37N,Y39T,E93N,I95T]
- n) G-CSF[A37N,Y39T,T133N,G135T]
- o) G-CSF[A37N,Y39T,A141N,A143T]
- p) G-CSF[A37N,Y39T,P57V,W58N,P60T,S63N,P65T]
- q) G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]
- r) G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

135. (new) The heterologous fusion protein of Claim 126 wherein the hyperglycosylated G-CSF analog is G-CSF[A37N,Y39T,P57V,W58N,P60T,Q67N,L69T]

136. (new) The heterologous fusion protein of Claim 126 wherein the hyperglycosylated G-CSF analog is G-CSF[A37N,Y39T,S63N,P65T,E93N,I95T]

137. (new) The heterologous fusion protein of Claim 117 wherein the polypeptide is the Fc portion of an Ig selected from the group consisting of: IgG1, IgG2, IgG3, IgG4, IgE, IgA, IgD, or IgM.

138. (new) The heterologous fusion protein of Claim 118 wherein the polypeptide is the Fc portion of an Ig selected from the group consisting of: IgG1, IgG2, IgG3, IgG4, IgE, IgA, IgD, or IgM.

139. (new) The heterologous fusion protein of Claim 137 wherein the polypeptide is the Fc portion of an Ig selected from the group consisting of: IgG1, IgG2, IgG3, and IgG4.

140. (new) The heterologous fusion protein of Claim 138 wherein the polypeptide is the Fc portion of an Ig selected from the group consisting of: IgG1, IgG2, IgG3, and IgG4.

141. (new) The heterologous fusion protein of Claim 139 wherein the polypeptide is the Fc portion of an IgG1 immunoglobulin.

142. (new) The heterologous fusion protein of Claim 140 wherein the polypeptide is the Fc portion of an IgG1 immunoglobulin.

143. (new) The heterologous fusion protein of Claim 139 wherein the polypeptide is the Fc portion of an IgG4 immunoglobulin.

144. (new) The heterologous fusion protein of Claim 142 wherein the polypeptide is the Fc portion of an IgG1 immunoglobulin.

145. (new) The heterologous fusion protein of Claim 117 wherein the Fc portion is a human IgG protein.

146. (new) The heterologous fusion protein of Claim 118 wherein the Fc portion is a human IgG protein.

147. (new) The heterologous fusion protein of Claim 117 wherein the Fc portion comprises hinge, CH2, and CH3 domains.

148. (new) The heterologous fusion protein of Claim 118 wherein the Fc portion comprises hinge, CH2, and CH3 domains.

149. (new) The heterologous fusion protein of Claim 141 wherein the polypeptide has the sequence of SEQ ID NO: 33.

150. (new) The heterologous fusion protein of Claim 142 wherein the polypeptide has the sequence of SEQ ID NO: 33.

151. (new) A polynucleotide encoding a heterologous fusion protein of Claim 141, wherein the polynucleotide comprises SEQ ID NO: 22.

152. (new) A polynucleotide encoding a heterologous fusion protein of Claim 142, wherein the polynucleotide comprises SEQ ID NO: 22.

153. (new) A polynucleotide encoding a heterologous fusion protein of Claim 117.

154. (new) A polynucleotide encoding a heterologous fusion protein of Claim 118.

155. (new) A polynucleotide encoding a heterologous fusion protein of Claim 119.

156. (new) A polynucleotide encoding a heterologous fusion protein of Claim 120.

157. (new) A polynucleotide encoding a heterologous fusion protein of Claim 126.

158. (new) A polynucleotide encoding a heterologous fusion protein of Claim 135.

159. (new) A polynucleotide encoding a heterologous fusion protein of Claim 136.

160. (new) A polynucleotide encoding a heterologous fusion protein of Claim 137.

161. (new) A vector comprising the polynucleotide of Claim 79.

162. (new) A vector comprising the polynucleotide of Claim 80.

163. (new) A vector comprising the polynucleotide of Claim 81.

164. (new) A vector comprising the polynucleotide of Claim 82.

165. (new) A vector comprising the polynucleotide of Claim 83.

166. (new) A vector comprising the polynucleotide of Claim 84.

- 167. (new) A vector comprising the polynucleotide of Claim 85.
- 168. (new) A vector comprising the polynucleotide of Claim 151.
- 169. (new) A vector comprising the polynucleotide of Claim 153.
- 170. (new) A host cell comprising the vector of Claim 161.
- 171. (new) A host cell comprising the vector of Claim 162.
- 172. (new) A host cell comprising the vector of Claim 163.
- 173. (new) A host cell comprising the vector of Claim 164.
- 174. (new) A host cell comprising the vector of Claim 165.
- 175. (new) A host cell comprising the vector of Claim 166.
- 176. (new) A host cell comprising the vector of Claim 167.
- 177. (new) A host cell comprising the vector of Claim 168.
- 178. (new) A host cell comprising the vector of Claim 169.
- 179. (new) A host cell expressing at least one heterologous fusion protein of Claim 52.
- 180. (new) A host cell expressing at least one heterologous fusion protein of Claim 53.
- 181. (new) A host cell expressing at least one heterologous fusion protein of Claim 55.
- 182. (new) A host cell expressing at least one heterologous fusion protein of Claim 56.
- 183. (new) A host cell expressing at least one heterologous fusion protein of Claim 61.
- 184. (new) A host cell expressing at least one heterologous fusion protein of Claim 70.
- 185. (new) A host cell expressing at least one heterologous fusion protein of Claim 73.

- 186. (new) A host cell expressing at least one heterologous fusion protein of Claim 86.
- 187. (new) A host cell expressing at least one heterologous fusion protein of Claim 88.
- 188. (new) A host cell expressing at least one heterologous fusion protein of Claim 117.
- 189. (new) A host cell expressing at least one heterologous fusion protein of Claim 118.
- 190. (new) A host cell expressing at least one heterologous fusion protein of Claim 119.
- 191. (new) A host cell expressing at least one heterologous fusion protein of Claim 120.
- 192. (new) A host cell expressing at least one heterologous fusion protein of Claim 126.
- 193. (new) A host cell expressing at least one heterologous fusion protein of Claim 135.
- 194. (new) A host cell expressing at least one heterologous fusion protein of Claim 136.
- 195. (new) A host cell expressing at least one heterologous fusion protein of Claim 137.
- 196. (new) The host cell of Claim 179 wherein said host cell is a CHO cell.
- 197. (new) The host cell of Claim 180 wherein said host cell is a CHO cell.
- 198. (new) The host cell of Claim 181 wherein said host cell is a CHO cell.
- 199. (new) The host cell of Claim 182 wherein said host cell is a CHO cell.
- 200. (new) The host cell of Claim 183 wherein said host cell is a CHO cell.
- 201. (new) The host cell of Claim 184 wherein said host cell is a CHO cell.
- 202. (new) The host cell of Claim 185 wherein said host cell is a CHO cell.
- 203. (new) The host cell of Claim 186 wherein said host cell is a CHO cell.
- 204. (new) The host cell of Claim 187 wherein said host cell is a CHO cell.

205. (new) The host cell of Claim 188 wherein said host cell is a CHO cell.
206. (new) The host cell of Claim 189 wherein said host cell is a CHO cell.
207. (new) The host cell of Claim 190 wherein said host cell is a CHO cell.
208. (new) The host cell of Claim 191 wherein said host cell is a CHO cell.
209. (new) The host cell of Claim 192 wherein said host cell is a CHO cell.
210. (new) The host cell of Claim 193 wherein said host cell is a CHO cell.
211. (new) The host cell of Claim 194 wherein said host cell is a CHO cell.
212. (new) The host cell of Claim 195 wherein said host cell is a CHO cell.
213. (new) A process for producing a heterologous fusion protein comprising the steps of transcribing and translating a polynucleotide of Claim 117 under conditions wherein the heterologous fusion protein is expressed in detectable amounts.
214. (new) A method for increasing neutrophil levels in a mammal comprising the administration of a therapeutically effective amount of the heterologous fusion protein of Claim 124.
215. (new) A method for increasing neutrophil levels in a mammal comprising the administration of a therapeutically effective amount of the heterologous fusion protein of Claim 125.
216. (new) A method for increasing neutrophil levels in a mammal comprising the administration of a therapeutically effective amount of the heterologous fusion protein of Claim 126.
217. (new) A method for increasing neutrophil levels in a mammal comprising the administration of a therapeutically effective amount of the heterologous fusion protein of Claim 137.
218. (new) Use of a heterologous fusion protein of Claim 117 for the treatment of patients with insufficient circulating neutrophil levels.

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219. (new) A pharmaceutical formulation adapted for the treatment of patients with insufficient neutrophil levels comprising a heterologous fusion protein of Claim 117.